

415 -

ALWAYS BRING THIS BOOK.



Mc _____

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IN ACCOUNT WITH

BARTON & WILLIAMS,
DEALERS IN
FINE GROCERIES,
FLOUR

OF ALL GRADES,
Selected Teas, Pure Coffees & Spices,
Butter & Cheese,
CHOICE SYRUP & MOLASSES.

Canned Fruit in Variety.

ALSO

A complete assortment of Goods usually
kept in a First Class Store.

415 (= var of 411)

Apatela like 411 on button ball bush

Weehawken N.J. Sept 15, 1893.

Head black. with stiff white hair. Labrum & base of antennae yellowish. Body a little enlarged at 12, & bent apatela like at 4-5. Vents ① large, renate, scarcely ant.

④ minute, post. stig. ⑤ ⑥ animal. Body deep black, a bright yellow sd line broken into irregular spots situated mainly in the mesosoma obsolete at ends; a few small dots lat. in mesosoma. A broad distinct band on S-S ridge, excavated above below spiracles then undulating, bright yellow, nearly discontinuous over ③

Vent ① & ② deep red, most distinct so centrally in body*, ③ brown, ④ white, ⑤-⑥ black. Spiracles white.

Feet & venter black. Hair short, sharp bristly, not dense, white, slightly brownish sd. (*where they are connected by a red shade) (It is obsolete. See Riley, not in Packard)

Calc. .32 .45 .62 .86 1.2 1.67 2.3 3.2 4.5 rat. 72
 Found .34 .4 .6 .9 1.2 1.9 2.5 3.4 4.5

416 (J. doll)

from Guadalupe

Set 13

Arachnida aulea max. to end of abdomen
 Hd rounded, as with 2 lobes, scarcely bilobed.
 Hd normal flattened fore, slightly retracted
 below 2. Shiny black. Body normal,
 large, robust. Venter large but low,
 arcuate, not at all elevated. Hair very
 bristly, quite short but dense, deep
 black. Body brownish black, darker
 unimaculate. Feet blackish brown.
 The feet black. Venter pale brown
 contrasting. Length 45-50 mm. Width

Other Stage I (Sept 16) Hd bilobed, mouth projecting
 lobes full, rounded, clipping large
 ocelli black. Mouth brown.
 Shiny blackish W. 3±. Body pale whitish brown
 shading into a milky color dorsally under
 lens. Venter small, black, unmarked normal
 Δ cth, the feet & abd. extremely black.
 Hair single black, rather long and
 curving in different direction, single
 from ①② 5-12 several from a wart on the
 others. Some rusty brown s-d shading.
 Hair points very much spinulose.
 Under x50 the warts are rounded & gray
 areas, scarcely elevated, smooth, the hair from
 black tubercles in these areas.

~~Egg of a ant (leafhopper) in sphere with
 base, shiny beautiful pearly iridescent
 diam. 6 mm. Postembryonic period
 molted 1 instar 10-12 days
 1st instar 10-12 days
 2nd instar 10-12 days
 3rd instar 10-12 days
 4th instar 10-12 days
 5th instar 10-12 days
 6th instar 10-12 days
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 95th instar 10-12 days
 96th instar 10-12 days
 97th instar 10-12 days
 98th instar 10-12 days
 99th instar 10-12 days
 100th instar 10-12 days~~

de, body earth black, warts
 white, feet cream (dull) the
 half w. Hybernated. Still
 June 10 1894 Image, July 20 1894
 the numerous, several
 Cat no 11027
 1st, spinulose, bristly
 end. ① about as large
 as ② with but one
 always with several
 Hd as before in shape.
 Body very pale chocolate
 brown s-d shaded brown.
 s-pale d. line. S-V,
 c.
 Venter mouth brownish w. in
 with a flesh colored
 w. Venter black Hair of
 stiff, hard bristles
 ends than centrally,
 white ones ant, 2.5 mm
 total pale line. White
 present, s-d & lat. lines.
 face 6-10 marked in brick
 red around ②. S. line very narrow, pale. Lat. line
 white line obscure. Hair 2-5, 11-12 more abundant
 & longer than centrally. S-V hair white, all spinulose
 warts black, rather coarsely granular. Hd 5± (sh. 9)
 a few long pale hairs at both ends
 not let 5 s-d squarish black, (sh. 10) Body all black, with a
 narrow s-d line. Venter & feet shiny, hair black at
 ends, very red centrally, the long ant & post. hair 1 mm
 of the S-V ones fully grown white. At first glance the
 shiny warts look as if there were white specks somewhere
 not Oct 10 Hd shiny black, Body black unimaculate, the
 warts shiny, abd feet reddish. Hair stiff bristly, points
 spinulose, very red mixed with black all over the body
 with a fine long pale line. The small spinulose white
 S-V hair indistinct, paler. (sh. 11) 1.9
 not Oct 15 Hd 2.8± Hd black, reddish lat. rays. Lat. line
 1 mm. pale. Same but central warts on the sides brownish
 spinulose white. Hair same. S-V scarcely paler. (sh. 12) 2.5
 not Oct 22 Black, warts brown, hair with a little red still. abd feet dull

Egg of A. anlea (fresh) $\frac{2}{3}$ sphere with ~~flat~~
base, shiny beautiful pearly iridescent
diam. 6 mm. Reticulation rounded,
moderate distinct radiating from the
umbilic. of quite uniform size
slight annular at apex. The angles
of the net. a series of short stiff spines.

alc. .32 .45 .62 .86 1.2 1.67 2.3 3.2 4.5 nat. 72
 found .34 .4 .6 .9 1.2 1.9 2.5 3.4 4.5

416 (J. doll)

from Guadalupe

Sept 13

Arachnidea aulea max. ~~to~~ slender, liberate
 rounded as ~~ant~~ as long, scarcely bilobed
 Hd normal flattened, slightly retracted
 below 2. Shiny black. Body normal,
 large, robust. Vents large but low,
 arcuate not at all elevated. Hair very
 bristly, quite short but dense, deep
 black. Body brownish black, darker
 unimaculate. Feet blackish brown.
 The feet black. Vents pale brown,
 contrasting. Length 45-50 mm. Width
 10-12 mm. ^{lobes full, rounded, clypeus large}
 Stage I (Sept 16) Hd bilobed mouth projecting
 ocelli black. Mouth brown. ^{Sh hd. 30}
 Shiny blackish W. 3 ± Body pale whitish brown
 shading into a milky color dorsally under
 lens. Vents small, black, unchanged normal
 Δ c-sh, the feet & abd. extremely black.
 Hair single black, rather long and
 curving in different direction. single
 from ① ② 5-12 several from a vent on the
 other. Some rusty brown s-d shading.
 Hair points very much spinulose.
 Under x50 the vents are rounded Δ gray
 areas, scarcely elevated, smooth, the hair from
 black tubercles in these areas.

upper end 31 Hair all jet black, body smooth black, vants
 light brown, apical white. feet cream (dull) this
 black. No black. Labrum & ant. pale. w. Hybricated. Still
 alive apr. 30 1894 corn June 10 1894 Imago July 20 1894
 (Sept 17) Hair more numerous ^{same}
 from each vent, black, spinulose, bristly
 but pointed at the end. ① about as large
 as the other vents, sometimes with but one
 distinct hair but always with several
 hair granulations. Hd as before in shape.
 w. (Sh hd 4) Hd shiny black. Body very pale chocolate
 brown with a darker s-d shaded band.
 & very faint narrow pale d-line. S-V,
 vents & hair black. ^(Sh hd 6)
 Sept 22 Hd shiny black, mouth brownish w. in
 body dark blackish brown with a flesh colored
 narrow, discrete d-line. Vents black Hair of
 different lengths, rather stiff, hard bristles,
 more abundant at the ends than centrally,
 with a few long white ones ant, 2.5 mm
 later d-sh reddish white central pale line. White
 line above vents ③ & ④ representing s-d & lat. lines.
 Sept 28 Same. Dorsal space 6-10 marked in brick
 red around ①. d-line very narrow, pale. Latent
 white lines obscure. Hair 2-5, 11-12 more abundant
 & longer than centrally. S-V hair white, all spinulose
 vent black, rather coarsely granular. Hd 8 ± (Sh 9)
 a few long pale hairs at both ends
 Oct 5 Hd squarish black, ^(Sh hd 12) in body all black with a
 narrow red d-line. Vents & the feet shiny, hair black at
 ends, gray red centrally, the long ant & first hair 6 mm
 of the S-V ones dark, new white, at first glance the
 shiny vents look as if there were white specks somewhere
 Oct 10 Hd shiny black. Body black unimaculate, the
 vents shiny, abd feet whitish. Hair stiff bristly, pointed
 spinulose, gray red mixed with black all over the body
 with a fine long pale line. The small spinulose white
 S-V hair is distinct, pale. (Sh hd 19)
 Oct 15 Hd 2.8 ± Hd black, reddish rays. Labrum & legs
 & ant. pale. Same but central vent on the sides brownish
 spinulose white. Hair same. S-V scarcely pale. (Sh hd 25)
 Oct 22 Black, vants brown, hair with a little red still. abd feet dull brown

Calen. 26 40 60 92 1.4 2.0 3.0 ~~4.0~~ 66
 Found — — .6 1.0 1.4 2.2 3.0

417 (J. Doll)

suffusa Schum.

Spidersoma-like larva of *Arachn* sp.
 Eggs nearly spherical but with flattened base, somewhat conoidal, the apex slightly acuminate. Diam. .6 mm. Of a fleshy brown or yellow color with a shiny pearl, bluish lustre. X50 covered with large, shallow pits with ill defined edges, not sharp enough to form reticulation of the space between. [would just head be about .35 mm?]
 Stage 6 very pale yellowish, shiny. large cluster of ocelli black, mouth brown a blackish shade at vertex. Scaenae lobes, very slightly retracted below. Roel normal, vent quite large but colorous & inconspicuous, the hair bearing granules only black. Pale greenish yellow with a faint white dorsal line. Oth small, legs shaped, brownish. In anal plate, hairs ③⑤ on 1-4 and 12 tiny marked with dark orange.

from Guadalupe, Mex.

Hair fine, not abundant or varying

Stage 6 Hd retracted, antenae marked, orange ochraceous, labrum & bases of antennae yellow w. 3 w. Body gray, wrinkled, interspersed with fine white streaks and minute black dots, a not well defined white d. line, with minute black dots in it. S-d line obsolete but its location marks a boundary where the color becomes darker gray laterally. Warts ①② conical, same pearl grey, wart ④ orange. A bright yellow line S-S line. Wart ③ slight orange, ⑥ whitish. The feet orange like head, abd. slightly orange tinted. Hair dense, even length, pointed tips, heavily spiculated black & white about evenly mixed. From thro. segs & 12-13 a few slender nearly smooth white hairs of great length 15-17 mm. A neat silver grey larva. Other same but grey is 2 shades darker & most of the hairs are black. S-v region pale, yellowish, with black S-v clouded seg. plates. Difference caused mainly by the hairs. ~~Oct 15~~ one con. Image June 1894
 ① slight orange, distinct as anal. feet esp on 12 Feet pale. Hair long, fine, abundant, black & white

Inst Oct 6 Hd retracted, antenae
marked, orange ochraceous, labrum
& bases of antennae yellow w. 3 v
Body gray ^{punctured &} wrinkled, interspersed
minutely of fine white streaks and
minute black dots. a not well
defined white d. line, with
minute black dots in it. s-d line
obsolete but its location marks a
boundary where the color becomes
darker gray laterally. Warts ①-⑤
concolorous, same pearl gray. Wart
④ orange. A bright yellow ~~lateral~~
s-s line. Warts ③ slightly orange. ⑥
whitish ^{with bases yellow like s-s line}. The feet orange like head,
abd. slightly orange tinted. Hair
dense, even length, pointed bristles,
heavily spinulated, black & white
about evenly mixed. From thro.
segs & 12-13 a few slender nearly
smooth white hairs of great length
15-17 mm. a neat silver gray larva.
Other same but gray is 2 shades darker
& most of the hairs are black. s-v region
pale, yellowish, with black s-v clouded
seg. patches. Difference caused mainly by the
hair Oct 15 one coon Images June 1894

trace of yellow

We are indebted to
"Catalogue of Lepidop
have relied to a gr
of synonymy of spe
Prof. J. B. Smith for
E. L. Graef, Mr. Wm
and Dr. A. S. Pack
certain specimens.

Local forms, breeding
great extent from the
whether connected by
mediate territory, or in
local race and local

3.0 ~~8/10~~ 8/10
3.0 8/10

diffusa Schan

Eggs nearly spherical but with flattened base, somewhat conoidal, the apex slightly acuminate. Diam. .6 mm. of a flesh, brown or yellow color with a shining pearl bluish luster. X50 covered with large, shallow pits with ill defined edges, not sharp enough to form reticulation of the space between. (Would first head be about .35 mm?)

from Snadajara, Mex.
Hair fine, not abundant. of varying
lengths, brownish
Stage II (Sk hd 1.05)
Stage hd 1 \neq Same. Antennae black tipped
Body much same but trace of a blackish
s-d line. Hair more abundant, mostly
short, white, but mixed with a few
very long hairs, some of which are black.
Feet all pale, colorless, water
molt 8/21 Hd bilobed brownish yellow, ocelli
black, mouth brownish, jaws black. (Sk hd 1.45)
Body green rather faded, the legs & area
around ③ on 12 shaded with orange. Feet &
acute whitish. a narrow defined ~~line~~ ^{*} ~~not~~ ^{conspicuous} white d & lat ^{ss} ~~line~~ the latter
shaded above & below with black dots. Mouth
large, unicolorous, the pair granules black.
Hair long, stiff & straight, thin, but fine, spinulose
white & black intermixed. Length 15 mm
Some of the hair are 8 mm long. ~~Later the~~
~~white lines~~ ^{conspicuous} Lat. one ~~very~~ ^{very} none
③ Also a distinct s-s one. Line of tracheae evident
Molt 8/26 Hd 2 \neq Hd bilobed, lobe full, rounded, rather
evident; pale brownish, ocelli black, mouth dark
concealed beneath the hair 12. s-space whitish
gray, d. white line, narrow, discrete. Lateral space
dark greenish gray, pale at ends. s-v space greenish
with dist. white s-v line. Mouth large ^{pale granules black} ~~chelicerae~~
④ slight orange, distinct as ant. & feet esp on 12
Feet pale. Hair long, ^{very} fine, abundant, black & white

from Snadajara, Mex.
Hair fine, not abundant. of varying
lengths, brownish
Stage II (Sk hd 1.05)
Stage hd 1 \neq Same. Antennae black tipped
Body much same but trace of a blackish
s-d line. Hair more abundant, mostly
short, white, but mixed with a few
very long hairs, some of which are black.
Feet all pale, colorless, water
molt 8/21 Hd bilobed brownish yellow, ocelli
black, mouth brownish, jaws black. (Sk hd 1.45)
Body green rather faded, the legs & area
around ③ on 12 shaded with orange. Feet &
acute whitish. a narrow defined ~~line~~ ^{*} ~~not~~ ^{not}
~~conspicuous~~ white d & lat ^{ss} ~~line~~ the latter
shaded above & below with black dots. Mouth
large, unicolorous, the pair granules black.
Hair long, stiff & straight, thin, but fine, spinulose
white & black intermixed. Length 15 mm
Some of the hair are 8 mm long. ~~Later the~~
~~white lines~~ ^{conspicuous} Lat. one ~~very~~ ^{very} none
③ Also a distinct s-s one. Line of tracheae evident
Molt 8/26 Hd 2 \neq Hd bilobed, lobe full, rounded, rather
evident; pale brownish, ocelli black, mouth dark
concealed beneath the hair 12. s-space whitish
gray, d. white line, narrow, discrete. Lateral space
dark greenish gray, pale at ends. s-v space greenish
with dist. white s-v line. Mouth large ^{pale granules black} ~~chelicerae~~
④ slight orange, distinct as ant. & feet esp on 12
Feet pale. Hair long, ^{very} fine, abundant, black & white

418 (J. Doll)

Sphinx crenatus on Brodiaea
 Hd. higher than wide, square on top but
 narrowing just before; clypeus angled,
 sutures deep. Coarsely shagreened; deep
 patchy horn with a white line on each
 side, near & under. Ocelli & mouth black
 w. $5\frac{1}{2}$ mm Body cylindrical, seg 8 annulets
 on 3 and d. a fleshy collar like projection
 Horn stout, moderate, slightly curved
 coarsely granular. Blackish pilosity
 thickish curved with little black dots
 in pale circles, 7 oblique lat. pale
 shades. The feet & horn black. The
 seg without dots, smoky brown, the
 cervical shield area paler, narrowly
 lined with black, bisected by a pale
 line with black bordered. a black patch
 on 2 just under "collar". On 3 & 8 just
 to collar a large oval sooty black
 patch, surrounded (but esp.) by a white shade
 which obtains on the "collar". ^{Spines on a} black area

On wild cherry, bayberry oak, Sept 1893. Had caltropes
 patches top of ② 6-12 and ⑬ but no long spine patches
 Caltrops present before last stage.
 Full grown 16 mm without horns. Out caltropes

419 (J. Doll)

Euclea indeterminata Ed (= Parasaroides Reak)
 on bayberry, N. J. Sept 16, 1893. [coll. by Doll]
 (two forms gamboge yellow or vermillion red.)
 Same stage, but horns vary in length some
 nearly twice as long as others & more slender!
 Head below 2, 2 below 3. Tho. feet small,
 pale, abd none; venter soft sticky,
 clean honey brown. Dorsum & sides
 flattened with sd & supsting series
 of segmentary horn like processes, and
 thickly with articulating spine. S-d horns
 3-13, horn on 4, 5, 8, 11, 12 very long, the
 ones on 3 & 13 moderate, the rest very short
 sub-spherical. Lat. row ^{3-4, 6-12 (work on 5)} ~~3-12~~ short,
 except on m 4 which is twice as long
 as the others. Spines round, the on m 5
^{in line with} ~~below the horns~~ those 6-12 much below
 them, the on 2 usually concealed
 as the segment is retracted. Head pale,
 blotched with red or its some part,
 ocelli & mouth dark. w. mm.

joint 2 granular long brown. Body (A)
 lemon yellow or (B) straw color the
 tubercles (A) yellow, tinged with purple
 on 3, 6-7, 9-10 or (B) vermillion red
 with a red band along the end line,
 lateral, along sharply horns and along
 s-v edge. Four narrow dark purple
 lines in d-space, or a bluish white
 ground, the 2 central 11, the outer undu-
 lating to correspond with the location
 of the larger horns. Four similar line
 in lateral space separated into
 2 pairs by a (A) yellow or (B) vermillion
 band, only slightly undulating. A
 similar single pair of line enclosing
 the spiracles, the one below than
 the ones distinct & separated from
 the others, written by a (A) yellow or (B)
 vermillion band. On 3, close below
 the super-s horn of 12 a depressed purple
 area with purple border. Ant edge of
 3 purplish. Circular spiracles brownish
 Sig. 18x7. Horns on 8, 2.5-4 mm. *Imago*
 June 1893

Cule 41 .58 .83 1.2 1.7 2.4 3.4 4.9 rat. 70
 7d 1.7 2.4 3±
 HYB. HYB.
 II III

420 (J. Dell)

Aetia nigr (?) with big life-like shed hides
 Ash hd 1.7 All just like next stage. **
 Stage 2.3± Hd rounded quadrate, median
 anterior well marked as vertex, shiny black.
 Inset joint of antennae pale salmon
 Body velvet black, immaculate, abd feet
 reddish. Most large, shiny black. Has
 very bristly, barb-clipt, short but dense
 black with a few long pale hair ^{longer} just.
 S-v hair from 5-6 fuzzy red. Thorax black
 molt 2.4± (sh. hd 2.4, 1.7) head 3- same but
 the feet reddish like abd. 3 spiracles white
 Median anterior of hd. pale. Labrum whitish
 Long hair from 3 also black as others.
 (sh. hd, same ones, by calipers 1.90, 2.18*) (3+
 1.84 2.14) (sh. hd)
 (" " " 1.64, 1.74 **)
 [Seem to be liberating - Oct. 11, 1893]
 Put on the ice box - Oct 13 - died

421 (J. Doll)

Set 17
183

Alcoholic Citheronia mexicana ^{splendens} Since
Stage hd 4.3 mm smooth, evenly rounded dark
brownish black, anterior half pale, mouth
parts, except jaws also pale. A few short
pale hairs above the mouth. Body
cylindrical, anal feet large with Δ
corneous plate. abd. feet long, with 2
rows of setiferous elongated tubercles.
Three rows of modified processes. ① s-d 2-13,
single d. on 12 & 13 with a pair on anal
plate; ② lat 2-13. ③ s-v, 2-13 ant. and
a small ④ on 2-6 ^{ant.} 11-13, also s-v below ③
Processes like antlers with about 6 thorn
like curving branches, ① on 2-4 & 12
about twice as long as the others, ② on
3-4 and ④ on 3 slightly longer than the
max. apices minute setiferous or bare.
Edges of anal plate with corneal setiferous
smooth tubercles. Color blackish, evenly
black. Processes all shiny black except
the basal half of ①-② 2-4 and the short

On anal plate & ④ on 5 & 13 which are white. Large spiracles black.

* thicker & with more branches. In another example the bases of many of the processes are white.

Stage hd 6.2 mm (A mat. regalis had head 7.0 mm)

between 6.4, 6.5. Hd as before, but the pale area around the mouth spread over the sides of the lobes: ocelli black, a few very short, but bristly setae.

Processes & tubercles all proportionately much shorter than before, the longest ones scarcely more than $\frac{1}{2}$ as long as the corresponding ones in C. regalis, the branches reduced to short conical prominences each with a very short spinous tip.

Tubercles on feet & anal plate, shorter rounded with small setae. Coloration much as before but the body's pale appears to have been blackish above & whitish sky shade. Spiracles large, black. The feet & anal plate partly pale. ✓

Set 511
1893

422 (J. Doll)

^{Desidamia}
Alcoholic Desidamia inscriptum.

Head rounded, nearly square as seen in front, median suture depressed along the clypeus over vertex. Slightly greenish green with a yellowish line from base of antenna up to vertex of lobe at one side, joining the sd line on the body.

W. 3.6 mm Body cylindrical, decreasing slightly & gradually in size from joint 5 to head. 12 a thick cylinder with a moderate rounded horn with rudimentary granulation. Segments rather finely 8-annulate. Green finely dotted with yellowish especially on the side with a pale sd line which runs evenly till 12 where it bends up and ends at base of horn. Spiracles white with a narrow black edge at each side, but none above & below. The feet pale testaceous. Subanal plate scarcely concave, pointed behind. Plate on anal feet not distinct.

423 (J. Doll)
 An *Onychophoran* sent to B. N. in abundant
 examples from Guadaluajara, Mexico.
 Calc. 2.61 3.07 3.61 4.25 5.0 5.9 mt. 85
 Found 2.5, 2.6 Guadaluajara, Mex.

3.0, 3.0, 3.2, 3.2

3.5, 3.58, 3.6 (5), 3.7 (4), 3.75 (2), 3.8 (6)

4.1, 4.15 (2), 4.2 (5), 4.25, 4.3 (2), 4.4 (2)

5.0, 5.4

6.0, 6.4

(37 lines)

All 50 stages essentially alike except in size.
 Hd. oval, full, rather wider than high,
 clypeus large & distinct; covering of head
 not extending far back at vertex,
 especially ~~ventrally~~ ^{medially} ~~ventrally~~ ^{sutural} when it
 is indicated by the fleshy back. Sutures
 not impressed. Surface granular or
 shagreened, shiny; a few dark setae
 from the lower part. Ground sordid
 white but thickly covered with elongate
 & rounded brown-black spots, especially
 along the sutures & over the sides.
 Labrum & basal joint of antennae

white. Hd. slightly retracted below.
 Body round flattened; with double undulate
 s-ridge & slight supsteg. line. The feet
 large, conical with distinct claws.
 Abd. feet flattened, very short, rudimentary
 but with a pear-shaped row of distinct
 radiating brown patches around a central
 depression. Feet on 7-10, 13, the last
 pair rather larger. 2d. to below spiracle
 covered by a single large c-sh. On 3 a
 similar one with a fold at spiracular
 region. On 4 the plate, separated at the
 dorsal by a rounded part, reaching to the
 stigmatal region. A large anal plate
 on 13. The plates sordid white, marked
 with black blotches forming s-d & lateral
 bands. Body sordid blackish brown, abd.
 feet pale. The feet & anal plate
 brown-black. Rather long but fine pale
 setae arise singly from minute tubercles
 on the feet. ① on middle, ② lat, little ant. ③ on
 seg. 1 & 2 on the s-v ridges. So fine can't see them
 Spiracles reddish brown. Body of many even width.

When mated, web over outside of case.

Cases vary with material but the stuff is all laid in cross-wise. A little case 20 mm. long is composed of woolly silks covered on the outside with pieces of leaves laid in flat ways. A case 80 mm. long is similar but the pieces of leaves are supplemented by little sticks laid in cross-wise.

The ends are wholly of silks. Mated 12 mm. Another case only 65 mm. long containing a larva with hd 5.0 mm. is much thicker especially ant. It is made of large sticks about 10 mm. long put in cross-wise with much fluff from silks almost like fur. Its shape is almost Δ. Width at head end 20 mm. at middle 13 mm.

♂ hd with 2 pupae 6.0. Evidently just the same. Dead hd 6.4 (5.4) (♂ Sh anal pl 3.8; ♀ do (same))

Larva hd 3.5. an. pl. 2.5; hd 4.8, pl. 4.2;

2♂ pupae to j. hd about 4.5. Same kind of case.

♂ Sh hd 4.5±

424

Allectus townsendi Riley, U.S. sent by F.D. A. Cockerell, Las Cruces, N.M.

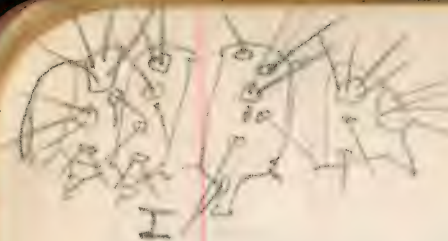
Head and thorax white with elongate black spot exactly as in 423. Labrum. bases of antennae white. W 5 mm. A large white cell on 2 reaching below spiracle with odd but irregular black bands. On 3 a similar narrow plate, not very arched. No distinct plate on 4 but some white & d. areoles in a s-d & lateral patch like the spots on 3 & white the white is reduced but without the dorsal mark. The feet large black. Body black, on abd. brown black, faintly marked with pale on the promemera of the superstity & 2 s-v ridges. Spiracles round, brown black.

Case of thick silks smooth, brownish covered with sticks laid in lengthwise. Dead Oct 22. Hd 5.2 mm.

425

Datana J from Dr. Packard from Olympic
 Wash. Nov. 6, 1913. Hd higher than wide
 flat before, sutures well marked, clypeus
 small, depressed above; surface ^{shagreened} punctured
 shiny black or shading into dark red
 above: w. 7.8. Body normal, black,
 the hair dense, short, pale, a few
 of the spines black at base, shining
 hair rather longer & stouter. Some of
 the very minute 2^o hairs are brown-black.
 But the longer ones are pale. C-sh
 pale (discolored), dotted with the brown
 bases of the hairs. Stripes even regular,
 about $\frac{1}{2}$ as wide as the space, pale
 (discolored) broken up and not con-
 fluent post. Base of all feet, and
 spots on 5-6, 11 & 12 (not on 13 or anal)
 pale, the spots occupying all the
 venter between feet & interrupting the
 medioventral line. No pedal line.
 Spiracles, anal plate & feet as

well as the feet & abd. ventral
 black.



Calc.	.29	.41	.59	.84	1.2	1.7	2.45	3.5
Prod	3	4	.65		1.1	1.4	2.0	3.5
								2.5

426

Aetia eggs on a stone at 113th St New York Dec. 17, 1893 Velvet black, a broad even d. a 5th faintest stripe wants legs, dull black, normal. Hair not very bristly, rather scant black ①-④, grey and ⑤⑥⁷⁸. 11 slight intensity faintest streaks not the feet black abd. pale W. hd 3-4 mm. Labrum whitish. The broad stripes are quite even but narrow a little towards the back and (especially the 1st d. above ③) do not quite reach the ends. Last hairs from 12-13 much longer than the others. The hair is thin, not at all obscuring the bright markings.

(Described Dec 28)

Eggs from Dr. O. Sargent May 20 1897 Rounded conical flat at base, adaxial, white chalky, a clear yellowish spot at apex. Reteculation mainly linear rounded hexagonal regular faint distinct no hollows. Surface between hexagonal cells is smooth. Hatched May 28 Hd black 3 Shaded 1st with blackish setae dusky, just very long & pale. Body full brown with nearly

wt. 7

Got more at West Palm Beach, Fla. in the live oak broods

427

Perophrasa melanocephala. Alcohol Dr. Packard's specimen. (ex. Jan 8, 1894) Hd large, round, granular, only 1 c-th, normal, large, covering 2 dorsally. Body all granular like spring. Feet normal, abd ones very short. Spinulae on 12 higher up than the others. Anal pl. very large, covering feet continuous with a broadened area on 12 ped. rounded in front by a transverse elevated fold. Setae fine, short, very obscure, apparently normal. Certainly 2 s-v and ① 12 seem not to be median, though there is a slight prominence centrally on 12 at the apex of the transverse fold.

Setae normal, no subp. but iii double on 5-13 Shed June 4 West Palm Beach blackish brown pale d. lat. s-v lines. Hair short & blackish long white on feet. Hd black, 4 mm. Late 12 Shed June 12 Brown black pale below, d. lat. straight white line. Long white hair ant 1 ped. d. hair black. Hd black, labrum pale 6 mm (6th hd 9). Hair scant whitish 3-4. Shed June 18 Hd 1 mm black, white d. Body black, d. lat. cream lat. s-v faint. Hair black & white, some white very long straight (Shed 6th) Shed June 25 Hd 1.4 (Shed 1.1) 2. lat. distinct cream, s-v broken Hair very long white, straight but fine. Venter pale & dark subvent. Hd 1 mm Shed June 20 Hd 2.1 Same Shed June 26 Hd 2.5 (Shed 2.0) 3? 2-8-13 Shed June 27 1897

Got another in house on black oak on the
hill on the road to Langford, Yaphank, L.
I. Sept. 3 1897

428

Lacsonia chondota One c-sh. the
coloration extending further back
feet normal, anal plate scarcely
enlarged. Body not granular,
smooth, setae from distinct
tubercles, more distinct than in
Perophragma. Centrally ① ant, ② post,
only a little below ①; ③ suspensory
ant. ④ ⑤ in line s-r, ⑥ along base
leg, (a few on base of leg) ⑦ composed
of several, representing leg, ⑧ each
side median line on apical seg.
not represented when the leg are.
12 just like this. ①12 not nearer
median than accounted for by the
smaller size of 12 and elevation of
apical. On the two segs there are
more than 6 setae [on 12 ①2 line, cent. ① just
below the joint
③ post, ④ 2 stig ant, ⑤ post s-s, ⑥ s-r, as
well as 2 on each side of ant.]

429

Chrysomela nemata from Paris (blown)
Ht rounded, black with blue brown, very hairy
w. 3.8 mm. Body black, hair all narrow,
even, closely parallel. D. line narrow, pale
pinkish & yellowish, faint at the middle of
each segment. Adorsal line broader, even,
a little dotted with black, bright orange
red; S-d line narrow, dotted, broken,
orange; a broad space of green color. Lateral line
broad, orange yellow, a little mottled &
blending into a narrow broken stigmatal
line; substigmatal broad but rather
faint & broken, red; venter shaded with
pale yellow along bases of legs. Feet,
c-sh, anal pl & slight hump on 12 without
marks. Hair scant, short, pale brownish
d and s-r with a few groups of stiffer
black hairs representing units ① & ②
(a better specimen)

Calc	4	.65	1.15	1.95	(2.45)	3.2	r.6
Alt	4	.6	.9	1.4	2.1	3.2	r.66
Sound	4	.6-.65	1.1-1.15	1.8-2.0	(2.2-2.4)	3.2	

430

Egg of *Chironomus* m. *Chironomus* m. H. M.

Nash, Pueblo, Col.

Egg D. upper surface round or elliptical with a concentric groove, white smooth stained by the brown froth in an area corresponding to meeting of bubbles. Shell rather thick, opaque, nearly incised. Laid close together or rounded end in a elongated columnar area forming a head band about $\frac{1}{2}$ way round a small twig. Froth rather hyaline with string continuous surface.

Hatched Mar. 20 as rounded shiny black w. 4 mm Body black, not shiny marked by a double row of minute orange dots. Sd. Head very white, quite black turning forward and back S-V; rather coarse. A narrow pale lat line. Top of head pale. Latent middle and sup. line. Sup. line reddish, dorsal by a black S. line. A S-V pale band. Head large web.

Large Sd. (2) minute, a little more below (3) small lat. when in (2), in line S-V? very obscure. The red orange patches, distinct only S-10.

1st Sd. wider ant. and post. but widest post., retracted centrally and divided by a narrow dark d-line. A distinct black mark is situated at the midventral joint bearing several pale hairs. (1)? and then a small brown spot on the widest part of ring, band (2)? There is one ant. above (4)? and one post below (5)? in the pale S-V region, apparently unpaired but obscure.

2nd Sd. 1st. Beneath gray with a row of ventral blackish spots, 4th black band of antenna white hair whitish; w. 6 mm. Body black with a narrow straight reddish ad-dorsal line slightly spread, at the end a post edge of each segment, absent at the extremities. A white ^{S-V} stigmatal line and faint ^{S-S} lateral line. D hair reddish, S-V paler. Seg. markings pale gray, a banded appearance when dry, a bent tip of abd feet pale. There are now some short hairs from the stern dorsally as well as lat., but the hairs left could not be made out in last stage.

3rd Sd. 9. Black; hair abundant, all reddish, white S-V and ^{S-S} d.

rather below
very slight traces of red abd line; pale
line quite distinct, as other marks
are a grayish blue. abd feet, a base of ant
feet. ⁵⁻⁸ pale lateral line faint
Later a series of narrow elliptical d. blue spots
with pointed ends, dist. on catenae, closely
bordered, the plurimodal narrow red abd
line. In sd space base of the blue dots. Labrum
pale. The red marks are much more reduced than before
Vro ^{later venter black} 4-10 to venter dark gray, blackish radially
top of abd. feet pale. 10 powder, blue, black
below, line above almost white. Body
black, thorax covered with powder, blue
up the mid enclosing the blue dots.
Many a series of seg. lateral black patches.
2 space black containing a narrow band
d. blue band, before it widens over the
single ocellus & broken range ad dorsal
line. Hair red, thickent of 15-18 and
pale 5-8. 12 a little enlarged, with
a black mark. 12 & 13 unimodal,
powdery blue. Base of antenna white &

* In some the lat. black spots form
a continuous band, separating a blue
band corresponding to the dot. The d. line
is continuous ^{in a few} broken blue than lat. area
other than dorsal ad dorsal are obsolete.
(Considerable variation in amount of blue
laterally.) * Some have the ^(latest stage) red blue band
broken into the ordinary spot and a
streak of blue below, and then the orange
is better developed showing a hint of its
sd portion as well as the ad d. stripe.
Male 5th 25 antenna (+ maxillary palps) pale
whitish at base, line above mouth brown. Labial
palps & opening of mouth lined with black.
The feet black, pale at joints; top of abd. feet
pale elsewhere, contrasting. Venter gray at
joint just after molting with under black
spots. 10 powder blue with black dots.
10-12 pale blue ^{orange} up to & including the
blue band in sd sp. (blue dots) leaving
a few dots & the rest of dorsal spot
which is at lower edge of round black

Space black, the blue of this broken
into a single head, ^{or continuous} ~~ad d + a~~
Red marks abundant except in ^{few dots} ~~trace~~
addition (small) slender narrow line
has marks abundant d. & s-v, all red.
The blue is bright, more whitish green than before
appearance a different, bright, and hair showing
Venter often patches with blue, round line many
white, largely broken down. 2013 all blue
Horn all red, thin d. & not at all ob-
scuring the horn, quite thick s-v
but not tinged. The blue on the sides
is very extensive as much as on
the bluish of the Wyoming ones. Patch
d-space changes to a black scalloped
by the advancing of incense blue
d. line usually distinct with center
lines. Red marks usually not noticeable
without lens

Several (not layers) mid May (sh hd 2.2)
before much closely as in stage before
but not quite so blue after molt

as described above. The interpolated
stage V is later than last but the blue
a little less extensive and not as
complement (only 3 or 4 had 6 stages)
One began to come May 7 ^{have not then up to in IV} (most all sick)

J. Inigo June 1-1894 cat no 10933

Others from C.A. Wiley, Nuts City, Montana
on wild cherry. Reed May 15 in stage III
Hds 1.2 ± d. line whitish blue, and orange
marks distinct, sides all blue, like IV above
(But horn with 201 to 202 May 17)
(Horn lost & shown)

Calc.	.41	.69	1.15	1.9	3.2	mt. .60
Found	.4	.65	1.15	1.95	3.2	
cross	.4	.65	1.1	1.4	2.1	3.2
			431			

Eggs of *C. disatris* from Wood's Hall. Hatched March 25, 1894. Egg very complete, edges steep, ring rather narrow and small, more a ring than patch. Well rounded with frothy covering, with ring granular. Larva rounded, black, scarcely shining with stiff short white hairs. w. 4 ±. Body normal, a little flattened, black without marks. Hair abundant, stiff, some short others longer, all pale, arrangement not evident. No white nor distinct tubercles. Later a faint reddish sd pale shade separated by a black d. line, and seg. markedly distinct. a whitish ^{S-S} shade a weak sd having several hairs, another less distinct one lat near short hairs. In hair abundant distinct on 5. No web. Apr 3 put in a covered bunch on the glass. Molt Apr 5. Hd black; legs, black, the adult markings indicated. J. 2 black with large sd spot, on thorax pale whitish

d. line, broken at vicinities on another more and part of each seg.; a distinct orange sd line quite regular, narrow; similar but more distinct lateral and S-S(?) lines. Thor. absolute at 2 & 12-13; ventral region pale gray. Hair abundant, pale reddish. Between 3d & lat line on 2-8, the ground color from dirt velvet, black spots, 12 a little enlarged d. In some d. line distinctly bluish. There is also a obscure pale line above base of legs. Later lateral region between lat & S-S line shaded with black, darker than d. line. Molt Apr 14. Hd black. d. line pale a whitish blue ~~for~~ enlarged, rounded out, continued, then smaller enlarged, the posterior part represented by a faint line. Ad-d. markings nearly obsolete; but a distinct ^{broken} sd reddish orange line. A blue band in sd space, broken on the continuation by the black spots. Lat & S-S line whitish. B-v region mottled with pale, ventral grayish. Hair thin, somewhat reddish abundant on 2, 12 post 13. Later marks on 3, 4 & 11 remain elongate, bluish, the others round up,

forming 2 contiguous white spots, and loss
the light end piece on each segment.
There are a few blue specks in dorsal space and
the dorsum of 2 & 12 is blue. Blue band
on abd op. broken by the black patches 3, 4, 12
most Apr 20 white d. spots, 2 pairing. large anal,
small central, connected in separate,
none on 2, on 3 & 4 single \blacklozenge , none on 12-13
d. space black, with anterior slightly
orange & below somewhat red (upper adduct)
blue below & base of vent. pale, lateral
8-9, 1 d.v. line pale, lateral again
gray, washed as before. Now all
pale reddish - venter more white
red-black on the d. enlargement. 5-d
blue band contains a row of black points
in its lower border which are enlarged
and divide it on 3, 4 & 12. Legs black,
tip of abd feet pale.

posterior one partly or largely reddish
2 space filled in with blue with a few
red streaks which are all nearly black
marked, venter of ① & ② black. Body
blue, black dotted, venter dark gray,
with central black patches. S-d orange
line narrow, straight, black edged.
Black spots just above lateral line small
Lateral line yellow straight, black edged
spiracles black. S-S line obsolete, the
one on base of legs faint but more
distinct than S-S, whitish. Feet gray,
pale at tips. C-sh black, with yellow
lateral angles. R enlarged a little &
largely black on the hump. Hair thin,
partly black & more abundant S-S,
pale reddish with pale hair inter-
mixed. A somewhat distinct lat.
mark on 2 bearing black line. (at
edge C-sh). Below lat. line grayish blue
S-d. band light blue

432

Hydropteryx aphanaeformis egg oval soft
thin shelled, not shiny yellowish .75 x 1.1 mm
from a lot of eggs from D. H. Hatched May 3
Hatched without water, round, shiny black
the spiracles labrum pale w. 4 mm.
3rd. on 2 large, 2 small, 3 small, 4 tiny
small ones separated d. shiny black The
feet large, shiny black, abd small, narrow
not used, the body elevated. Large black
anal pl. and less distinct, common
dark area d. on 12 faint on the narrow 13 ant
separated (entire) both all dark brown
whole line pale, no tubercles. Abd feet
black internally, hooks on 2-4, 13, 14, 15
feet rather distinct on 4, 6. Hair condense
2 on 4 and 5 slightly creased anal -
① 5th joint. ② just below 4 ant, ③ separating
a little joint, long ④ small, 5-5, a little
ant, upper side 5x fold; (2 or 3 very fine
ones on lower leg) ⑤ angle on inside of
leg. all hard to make out.

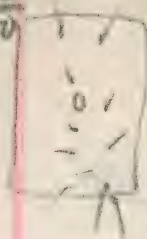
Made ring of little bits of bark and later
little conical tops in which they stayed
Mounted same (see sample in alcohol)
Further on May 26. active

433

Looper on Crataegus, Cent. at Park. May 1894
Hd depressed at vertex; clypeus labrum large
w. 1.8 mm. Sordid pale purplish with
black smothering in middle of lobes above
& irregular longitudinal white narrow
line in front, one crossing middle of clypeus
the other its apex. Abd feet 10, 13. Two feet pale
clear. Color obscure purplish streaked
with white, setae by minute black dots
① and ② post. ③ supra stig ant. ④ stig post.
⑤ S.S. ant. ⑥ & ⑦ in line, 6 being
up, mainly the ant and me (7 & 8) middle & post
in place of post ⑧ next mid-ventral line
marked with sandy black & white, no
distinct marks, the white defined in
obscure patches & oblique lateral
shades the black as sd & S.S. shaded
faint. Lateral region with a reddish
under tone. Venter pale, whitish,
General appearance like bark

Calc., 34 .49 .75 1.1 1.7 2.6 $\frac{66}{100}$
wa seems x/i ant

(See 945) 434



VIII

Looper, Linden, Maple, Plattburgh June 6 '94
Hds 2.6 mm round, normal slope; rough, not
shiny brownish red, pale in sutures & around
mouth, from a ocelli dark. Abd feet 10, 13 latter
large. Tubs. i, ii, iii 1.25 post v, vi normal vii a and
viii b post in line with vi, vii c ant vii d
median in line between vii a and b. viii.
Double d. & lat narrow black line, crinkled
linear, a single faint ad-dorsal, a
dist. straggle arched stig, festooned up
and of spiracle to touch lower lat.
all absent on reddish cth. & anal pl
venter, milky white, stig region yellow
pale & bright; dorsal & lat region
shaded in with tan color or reddish
brown of darker or lighter shade between
the lines spiracles black rounded

434 2.6

945 2.9 1.8

543 2.6 1.6 1.1 .85 .55 .3
2.4
2.2
2.5

435-

larva on round leaf of *Verbena*, N.Y. June 4
 Hb red brown, body whitish with pink
 tinge of green. tubercles in black spots.
 etc. the feet and anal plate black.
 alcoholic spec. kept in N.Y.

Erannia tiliaria Harris
 This well known larva
 has frequently been
 referred to in econ.
 ent. lit. but I find
 no account of the
 life & desc. of all
 the stages. Harris
 gives a good general
 account of the habit
 Jaeger, Coquillett
 Saunders & Fernald
^{Sugger}
 have also written
 on it.

434

945-

+ /

Erannia tiliaria Harris
This well known larva
has frequently been
referred to in econ.
ent. lit, but I find
no account of the
life & desc. of all
the stages. Harris
gives a good general
account of the habit
Jager, Coquillett
Saunders & Howard
^{Sugger}
have also written
on it.

434

945-

+/-

MAMESTRA PURPURISSAR

435-

larva on round leaf Viburnum, N.Y. June 4
Head brown, body whitish with just a
tinge of green. tubercles in black spots.
c.h. the feet and anal plate black.
alcoholic spec. kept in N.Y.

